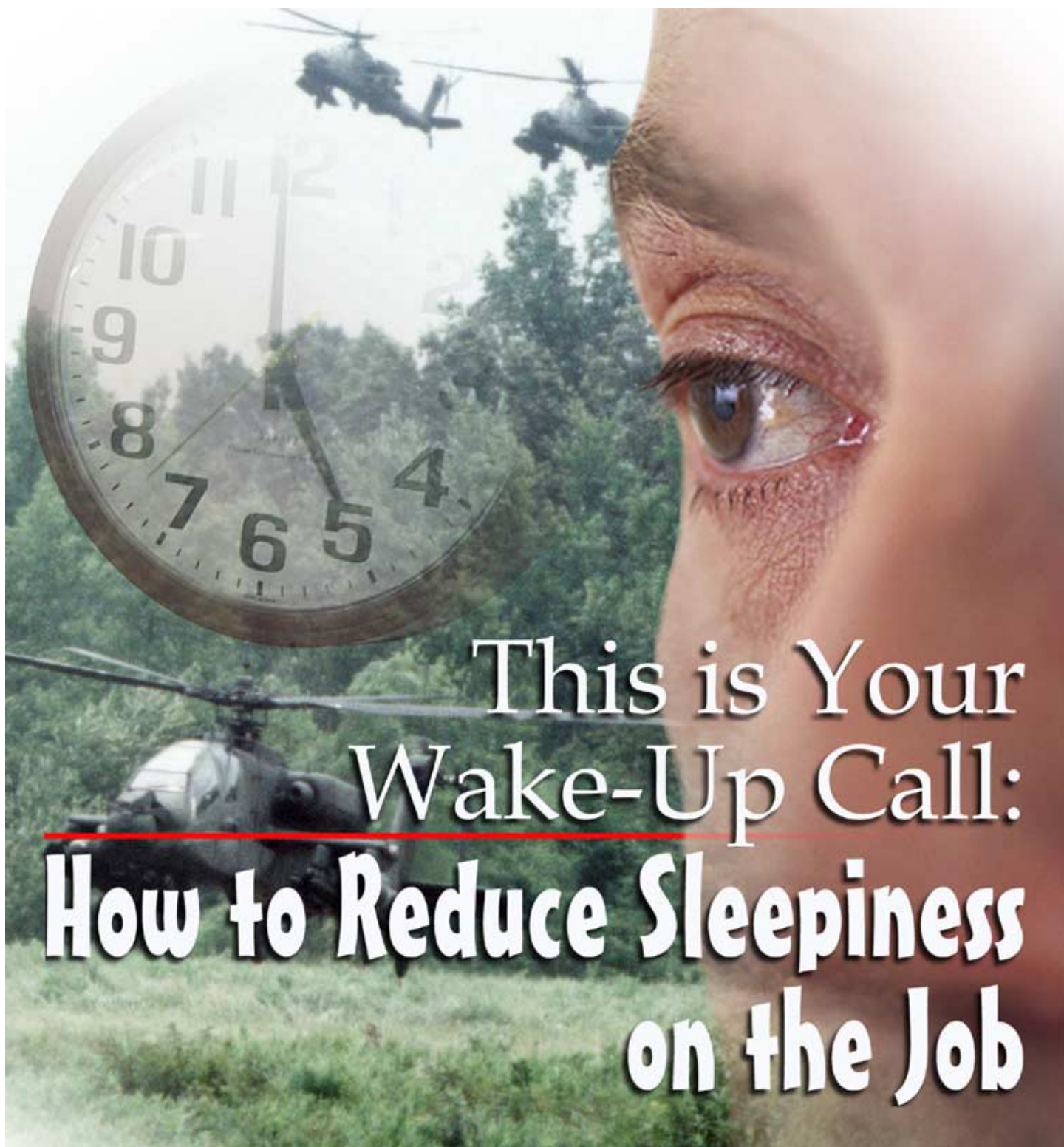


# Flightfax

ARMY AVIATION  
RISK-MANAGEMENT  
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This is Your  
Wake-Up Call:  

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How to Reduce Sleepiness  
on the Job

# This is Your Wake-Up Call: How to Reduce Sleepiness on the Job

**A**viator fatigue is getting a lot of attention these days, largely because of the high-profile media coverage of recent accidents in the commercial sector. When 11 people, including the captain, died in the 1999 crash of American Airlines flight 1420, fatigue was one of the first possibilities that came to mind, in an effort to explain why an experienced pilot would try to land his MD-80 in Class Six thunderstorms. Although final determinations have yet to be made, pilot fatigue/sleepiness remains a primary candidate because both the pilot and copilot had been on duty for 13 straight hours prior to the mishap. This, combined with the other routine day-to-day stressors, may have impaired the judgment and reaction time of the crew so that safety was compromised.

Fatigue also has been identified as a factor in the 1997 crash of Korean Air flight 801 in Guam. In this case, the National Transportation Safety Board ruled that fatigue was a major contributor to the general confusion and impaired reactions of the pilot and crew which ultimately resulted in the deaths of 228 people. In fact, in the last few minutes of

conversation on the recovered cockpit voice recorder, the captain himself said that he was "really . . . sleepy." In light of these types of reports, it is clear that fatigue can be very dangerous, at least in some situations. But, generally speaking, how big of a problem is it?

## HOW CAN YOU TELL?

Unfortunately, it is difficult to know exactly how many mishaps are the direct result of impaired alertness because there is no Breathalyzer for fatigue; however, there is mounting evidence that tiredness in the cockpit has reached alarming levels in the aviation sector.<sup>1</sup> A former NASA scientist recently indicated that as many as 70 percent of the commercial pilots he surveyed reported they had nodded off in the cockpit at some point.

This is a pretty scary thought, but it's not too hard to believe in light of the results from a recent survey of Army aviators conducted here at the U.S. Army Aeromedical Research Laboratory (USAARL.) Among the pilots who were asked, 44 percent answered Yes to the question: "In all the time you have been flying, have you ever dozed off while flying in the cockpit?" Furthermore, 82 percent said

they believed that fatigue or lack of rest was a contributing factor to the increase in aviation accidents.

These results might lead us to question why pilots in particular are so tired, but the truth is that it's not just the pilots, but also a lot of other people in the U.S. In fact, a National Sleep Foundation survey of Americans revealed that 37 percent of adults felt they were so sleepy during the day that it interfered with their routine activities.<sup>2</sup> Almost 20 percent said they occasionally or frequently made errors at work due to sleepiness.

Disturbingly, this type of fatigue is not limited to the office, but affects the everyday commute between home and work as well. Estimates from the U.S. National Highway Traffic Safety Administration indicate that approximately 100,000 crashes and 1,500 fatalities each year involve driver drowsiness/fatigue<sup>3</sup>, a finding which coincides with the National Sleep Foundation's discovery that 27 percent of drivers admit to have fallen asleep behind the wheel. The National Transportation Safety Board furthermore reports that fatigue is a probable cause in 57 percent of fatal-to-the-driver truck accidents.<sup>4</sup>

<sup>1</sup>Flying tired? Dateline NBC, [www.msnbc.com/news/367099.asp](http://www.msnbc.com/news/367099.asp), February, 2000.

<sup>2</sup>1998 Omnibus Sleep In America Poll, National Sleep Foundation, March 1998.

<sup>3</sup>Don't drive drowsy: Fatigue can be just as lethal as drunk driving, Traffic Safety, July/August, pp 12-15, 1996.

<sup>4</sup>From laboratory to flightdeck: Promoting operational alertness, In Fatigue and duty limitations: An international review, The Royal Aeronautical Society, pp 7.1-7.14, 1997.

In view of these facts, it's no surprise that the fast pace of everyday life is producing serious sleepiness and fatigue that is creeping into everyone's leisure and work time. Fortunately, not everyone has to make the sorts of moment-to-moment critical decisions that are required of aviators. So, while fatigue is problematic throughout society, it can be catastrophic in aviation. The question is, what can we do to reduce the amount of on-the-job sleepiness among aviators on a daily basis?

### WHAT CAN WE DO ABOUT IT?

The first thing is to determine whether or not sleepiness/fatigue is affecting your individual alertness and well-being. This may sound like a simple task, but it may take some serious effort to come up with an accurate answer. Ask yourself the following questions:

■ On most days, do you have much difficulty waking up without the aid of an alarm clock?

■ Do you repeatedly press the snooze button to catch a few extra minutes of sleep?

■ Do you have to fight the temptation to take a nap during the day?

■ Do you have trouble staying awake during meetings, while riding in a car, or while watching TV?

■ Are you so sleepy at night that you're out within 5 minutes of your head hitting the pillow?

■ Do you really look forward to the weekends just so you can catch up on sleep?

■ When you have a day off, do you usually sleep more than 2 hours longer than normal? If you answered Yes to the majority of these questions, it is pretty clear that you are suffering from sleep deprivation. So, what can you do about it?

There are many reasons that people don't sleep enough every night. Some of them are related to medical disorders, such as

sleep apnea, which require a doctor's intervention.

However, a great percentage of us don't get enough sleep—either because we deliberately shorten the sleep period for the sake of work, recreation, or family;<sup>5</sup> or because of a range of other problems including poor sleep habits.<sup>6</sup>

You might belong to the first category (deliberate short sleepers) if you often set aside less than 8 hours for sleeping each night. If this is the case, you unfortunately have a lot of company since the average amount of sleep in the U.S. is only about 7 hours per night, and 3 out of every 10 Americans sleep less than 6.5 hours. Chronic sleep deprivation is difficult to avoid in a society that glorifies a strong work ethic to the extent that going without sleep is seen as a reflection of a real

go-getter who is willing to sacrifice whatever it takes to get the job done.

However, in the long run, inadequate sleep leads to poor and sometimes dangerous performance, especially in jobs like aviation where small mistakes can lead to big problems. So, if you are one of these self-sleep-deprived people, cut it out! You need at least 8 hours to be your best. Plan your days accordingly, and remember there is no way to train yourself to get by on less sleep.

If you are sleepy on the job, but it's because you have trouble going to sleep or staying asleep even though you really try to get enough sack time every night, you are probably

suffering from bad sleep habits. It is estimated that a high percentage of insomnia cases occur simply because people engage in behaviors that are contrary to sleep. So, if you are someone who tries to sleep but just can't, try the following:

■ Establish a regular bedtime and waking time schedule, and stick to it, even on days off.

■ Make sure your room is cool, dark, quiet, and comfortable.

■ Do not engage in heavy exercise within 4 hours of bedtime.

■ Avoid heavy meals within 3 hours of bedtime.

■ Use the bedroom only

**Inadequate sleep leads to poor and sometimes dangerous performance, especially in jobs like aviation.**

<sup>5</sup>2000 Omnibus sleep in America poll, National Sleep Foundation, March, 1998.

<sup>6</sup>Relief from situational insomnia, Postgrad Medicine, volume 92, pp 157-170, 1992.



for sleep, and avoid working, watching TV, etc. in bed.

■ If you tend to worry, set aside an earlier time to list problems and actions to be dealt with the next day.

■ Try using simple relaxation techniques to reduce stress right before bedtime.

■ Place the alarm clock where you can't seek out the time every time you wake up.

■ Avoid caffeinated foods and drinks, and remember that some medications contain caffeine.

■ Avoid heavy alcohol consumption—it breaks up sleep in the second half of the night.

If you follow all of these recommendations, but find you're still having problems being as sharp as you should be, it's possible you may have an undetected sleep disorder. Such problems can be diagnosed by a sleep specialist who is trained to recognize and treat a wide range of sleeping difficulties. It's important to note that many sleep disorders

are highly treatable, and the positive results can change your life. Not only will your energy levels improve, but also the change in your mood and performance will be amazing.

In summary, the key point is that adequate daily sleep is a physiological necessity like food and water, and there is no substitute. Eight solid hours of nightly sleep is the amount needed by the average person to be as alert as possible. Less than that leads to generalized fatigue which slows reaction time, decreases attention span, impairs crew coordination, and interferes with the ability of aviation and support personnel to get the job done. In fact, inadequate nightly sleep can produce micro lapses during which the brain of a fatigued person literally falls asleep for 4-5 seconds at a time without their knowledge. Just think, on the highway driving at 55 miles per hour, that's long enough to travel the length of a football field. That's quite a distance

relative to how close your car is to telephone poles, bridge railings, and oncoming traffic. Imagine how that translates to the flight environment at 120 knots or more!

The Army has consistently emphasized training personnel on how to manage fatigue, and the AR 95-1 crew endurance guide is a clear effort to control fatigue risks both in peacetime and combat settings. However, fatigue management must be an individual as well as an institutional priority. It's going to take a team effort to eliminate this problem. Recognizing the dangers of sleepiness in the aircraft, flightline, hangar, and the maintenance bay, and taking the appropriate preventive and corrective actions will go a long way toward ensuring that aircrew safety is our first priority and Army aviation remains Above the Best. ♦

—John A. Caldwell, Ph.D., Director, Sustained Operations Research, U.S. Army Aeromedical Research Laboratory, 334-255-xxxx, DSN 558-6864, john.caldwell@se.amedd.army.mil

## **Final Exam on Fatigue**

*Q. What is the difference between fatigue and sleepiness?*

**A. Fatigue and sleepiness are often considered to be the same. It is the state of tiredness due to prolonged work or insufficient sleep.**

*Q. Why are the effects of fatigue underestimated?*

**A. The effects of fatigue can be underestimated because, unlike alcohol, there is no breath analyzer for fatigue. Sleepy pilots are reluctant to admit they fell asleep on the job, especially if an accident resulted.**

*Q. How big a problem is fatigue?*

**A. Approximately 63 million Americans suffer from moderate or severe daytime sleepiness.**

**This adversely affects on-the-job concentration, decision-making, problem solving, and performance. Forty percent of adults say their sleep is inadequate. Many of the over 25 million shift workers in the US (including Army personnel) find it impossible to stay alert during their night jobs because of inadequate sleep during the day.**

*Q. When is the worst time for fatigue?*

**A. Alertness is greater during the day. Our biological rhythms are set to 24-hour cycles by exposure to daylight, knowledge of clock time, meal intervals, and activity schedules. Because of this, we feel sleepier at night, and don't perform as well as we do in the daytime.**

*Q. What does fatigue cost?*

**A. Fatigue costs 18 billion dollars in US industrial production every year. Fifty percent of aviation mishaps are caused by human error, and fatigue is thought to be directly responsible for many of these.**

*Q. Can I train myself to need less sleep?*

**A. No. Simple tasks can be made resistant to sleep loss by practicing them until they become automatic; but this will not work with tasks that require vigilance, thought, and/or judgment. Sleep deprived individuals perform poorly, but often are unaware of their level of impairment.**

*Q. How can I improve my alertness on night flights?*

**A. Avoiding fatigue during night flights is difficult. If there is no flexibility in establishing when a flight will take place, try the following strategies:**

- Get plenty of sleep before the flight.
- If the flight is late in the day, or at night, take a 45-minute nap before takeoff.
- Avoid alcohol consumption within 24 hours prior to night flights.
- During the flight, swap tasks between pilot and co-pilot to minimize boredom.
- Consume caffeine immediately before and during the flight.
- Avoid hot refueling in favor of shutting down and walking around for a few minutes.
- Note that increasing radio volume and exposure to cold air do not fight off sleep.
- Remember that after being awake for a long time, you may involuntarily fall asleep, despite your best efforts.

*Q. What are some fatigue warning signals?*

**A. When there is no choice but to fly when tired, be aware of these indicators that you are at serious risk for falling asleep:**

- Eyes go in and out of focus.
- Head bobs involuntarily.
- Cannot stop yawning.
- Thoughts become wandering and disconnected.
- Cannot remember things you did.
- Navigation checkpoints are missed.
- Routine procedures are not performed.
- Control accuracy degrades

**If you experience even one of these symptoms, the safest course of action is to end the flight as soon as possible and get some sleep.**

# ATTENTION AH-64 DRIVERS

**Reminder—this ASAM—AH-64-97-ASAM-04—is still in effect**

**A**viation Safety Action Message, Maintenance Mandatory, All AH-64 Aircraft, inspection of number 2L stringer for AH-64 aircraft having accumulated 1750 or more flight hours.



## SUMMARY OF PROBLEM

AH-64 aircraft having flown 1750 or more flight hours are susceptible to cracking of the number 2L stringer. Previous fatigue tests conducted in a laboratory on an AH-64A tailboom revealed cracking of the 2L stringer at the equivalent 1750 flight hours.

Unless a doubler reinforcement is applied or the slot area has been closed the aircraft must be inspected for

cracks before each flight.

## INSPECTION PROCEDURES

Inspect skin surface over the number 2L stringer area of the slot on the upper left side of the tailboom from fuselage station (FS) 409 – 476 before each flight. Concentrate on the skin surface over the number 2L stringer. Inspect for working rivets or skin cracking.

If skin cracking is found during the inspection inspect the number 2L stringer inside the fuselage.

■ Inspect the area of the stringer directly in line with the skin crack and the area 3 rivet rows forward and aft of the crack.

■ Perform a fluorescent penetrant inspection and use a 10X magnifier.

If stringer is cracked, aircraft is non-operational until stringer is replaced.

If no crack is found, proceed to step 3.

■ Perform AMCOM approved eddy current inspection.

If working rivets are found, inspect the corresponding hole area in the number 2L stringer inside the tailboom and check three adjacent fastener holes forward and aft.

■ Determine if the fastener can be moved by hand.

■ Use 10X magnifier to inspect for number 2L cracks.

If crack is found, aircraft is non-operational until stringer is replaced.

If no crack is found, continue inspection.

Contact Technical POC before removing and replacing loose fasteners and inspecting for cracks using eddy current probe. ♦

—CW5 Bill Ramsey, Aviation Investigation Division, USASC, DSN 588-2785 (334) 255-2785, ramseyw@safetycenter.army.mil

## NCO Corner

### 2000 ALSE User's Conference set

**T**he Aviation Life Support Equipment User's conference is scheduled for 19-21 September 2000 at the Rocket Auditorium, Redstone Arsenal, Huntsville AL. Commanders, ALSE officers and technicians, unit safety officers, and other interested personnel are invited to attend. There is no conference fee this year.

Duty uniform or Class B is the dress for the conference. Civilian attire is acceptable for the last day of the conference.

A block of rooms has been reserved at the Huntsville Hilton at Huntsville's per diem rate. Call (256) 533-1400 to make a room reservation, mentioning the conference to obtain the per diem rate.

For information on presentations or other conference items, contact Melanie Barksdale (256) 313-4269, [Melanie.barksdale@peoavn.redstone.army.mil](mailto:Melanie.barksdale@peoavn.redstone.army.mil) or John Jolly (256) 313-4262, [john.jolly@peoavn.redstone.army.mil](mailto:john.jolly@peoavn.redstone.army.mil).



### **CW2 Michael H. LaMee**

During a routine medical evacuation from the Air Force Academy to University Hospital, Denver, CO, the UH-60 medical evacuation helicopter experienced decreasing rotor RPM. The aircraft was in straight and level flight at approximately 100 KIAS.

The co-pilot was on the controls when the event occurred. He immediately reduced collective to regain rotor RPM while CW2 LaMee, the pilot-in-command, focused his attention inside the aircraft to determine what was happening. CW2 LaMee noted that both engines were running and indicating "in the 500s" on TGT. This was a normal indication for TGTs at that current low power setting.

CW2 LaMee told the co-pilot that the engines appeared to be functioning normally. The co-pilot applied collective to arrest the descent, and the low rotor audio and light were again immediately activated. Simultaneously, the co-pilot entered an autorotation, while CW2

LaMee looked for a forced landing area. Continued flight was not possible because of decreasing rotor RPM.

CW2 LaMee chose the only unlit, uninhabited area, which was to their front left. When the landing light was used to illuminate the selected area, it was discovered to be a river filled with large boulders and other obstacles, both natural and man-made.

At this point, CW2 LaMee elected to land on the nearest road, which was an interstate carrying a large volume of vehicular traffic. Electing to cross over oncoming traffic to avoid landing head-on into interstate traffic, he brought the nose of the aircraft up to trade off airspeed for altitude, and collective was applied in an attempt to clear this traffic. The aircraft did not have sufficient altitude to clear the median between the northbound and southbound lanes. The tail wheel was torn from the aircraft as it crossed the interstate's concrete barrier. Once across the median, as the aircraft was turned to the north to land with the flow of traffic, an enormous set of power lines loomed directly in the flight path. The nose was brought down and collective bottomed out to get under these wires.

The aircraft impacted the ground and skidded down the interstate. Full left pedal was applied to enable the crew to guide the damaged aircraft out of traffic and bring it to rest in the breakdown lane

of the interstate. The accident investigation determined that the cause of the accident was Dual Engine Rollback.

The crew performed emergency shutdown, and egressed the aircraft after the blades stopped turning. Crewmembers then directed vehicle traffic around the aircraft, and the patient on board was transferred from the aircraft to an ambulance and transported to a nearby hospital.

Immediate decisions and actions by CW2 LaMee and the crew saved not only the lives of the crew and patient, but also the lives of untold numbers of civilians on the ground, both on the interstate and in the surrounding community.

### **CPT Kevin McGrath**

During cruise flight over a remote training area in northern Wisconsin, the OH-58 crew experienced an engine malfunction. Initial indications of the malfunction were a change in engine noise, followed almost immediately by the Engine low RPM audio and light.

The IP immediately took the controls, lowering the collective to preserve rotor RPM. He then slowed the aircraft to 60 KIAS as it entered autorotation. The engine did not fail, but the N1 would not increase above 65 to 68%. The aircraft would not maintain level flight.

CPT McGrath then announced he had an engine underspeed and was making a forced landing on company FM. While on descent, he observed



his chosen landing area was heavily wooded, very uneven terrain. At 100 feet AGL, he turned left to a level, flat area, covered with thick brush. Upon landing in the brushy area, smoke and fumes were

observed and emergency shutdown was performed. The crew then egressed the aircraft. The aircraft settled upright and level on three mossy clumps in a rugged and remote swampy area of Northern Wisconsin.

CPT McGrath's immediate and instinctive actions in response to this emergency situation over a densely forested, remote training area, ensured the safety of the crew without visible damage to the aircraft. ✧

## The Maintenance Test Pilot course

### Do you have what it takes...?

**I**s the Maintenance Test Pilot Course in your future? Do you hope to attend the Instructor Pilot Course? Did you know there are requirements you must meet before you can attend these courses? Do you know what they are?

AR 95-1, available online at the U.S. Army Publishing Agency's Home page; [www.usapa.army.mil](http://www.usapa.army.mil), and the Army Training Requirements and Resources System (ATRRS); online at [www.atrrs.army.mil](http://www.atrrs.army.mil), will let you know if you meet the prerequisites to attend the Maintenance Test Pilot Course or the Instructor Pilot Course. The prerequisites are:

#### Maintenance Test Pilot Course

- 500 hours of pilot time in aircraft category.
- 250 hours in the course aircraft type/design.
- 50 hours as PC in the course aircraft type/design.
- Current class II flight physical that will not expire during the course.

#### Instructor Pilot Course/Methods of Instruction

- A letter of recommendation from your unit commander.
- 500 hours of pilot time in aircraft category.
- 250 hours in the course aircraft type/design.
- 50 hours as PC in the course aircraft type/design.
- 48 hours pilot time in the course aircraft type/design in the last six months.
- 25 hours NVS in the last six months. (AH-64 only)
- Performed pilot duties in the course aircraft in the last 180 days.

#### NVD qualified.

Assigned to, or on orders to, a unit with the course aircraft. Current class II flight physical that will not expire during the course.

#### GETTING A WAIVER

Do you find yourself a bit short on the requirements? Don't worry. Some of the prerequisites may be waived. First, let's look at the ones that cannot be waived. For IPC/MOI the letter of recommendation is a must.

The same goes for the 500

hours in category. That requirement cannot be waived for IPC/MOI. The rest may be waived, depending on the aviator's total experience.

Having as many of the prerequisites as possible, however, would help your request for waiver. For instance, a 40-hour PC in the course aircraft has a better chance for favorable action on a waiver than an aviator with 20 hours PC time in the course aircraft.

Give yourself the best chance to start and finish the course. Get that time before requesting a waiver. Remember, these are not refresher courses.

If you are going to attend one of these courses in the future and need a waiver request for the course prerequisites, don't wait until you arrive at the school. You can contact the Aviation Training Brigade Standardization Office by e-mail. Just send a note to [conversej@rucker.army.mil](mailto:conversej@rucker.army.mil) and ask for a waiver form. We'll send you one by e-mail that you can print and fax back to us. Then we'll process the paperwork, and let you know if you have what it takes before you arrive at Fort Rucker. ✧

—CW4 John H. Converse, Standardization Office, Aviation Training Brigade, DSN 558-3259 (334) 255-3259, [conversej@rucker.army.mil](mailto:conversej@rucker.army.mil)



# Motorcycle Safety

## Roadmap to a Good Ride

**T**here's a lot to be said for motorcycles.

Motorcycles provide an economical means of transportation to and from work, and provide off-duty transportation and recreation as well.

When controlled by careless or inexperienced drivers, however, motorcycles can be lethal. In fact, the Army experienced 79 recordable motorcycle accidents involving soldiers in FY99. Of these 79 accidents, 21 Army personnel lost their lives.

These accidents and deaths should provide the impetus for leaders to stop and ask themselves three important questions:

■ Am I providing enough

training for my soldiers?

To answer this question, it is first necessary to reiterate the regulatory requirements for motorcycle riders. Paragraph 3-2a(2) of AR 385-55,<sup>1</sup> Prevention of Motor Vehicle Accidents, states the following: "Each driver of a military or privately owned motorcycle or moped who is authorized to operate on an Army installation will be required to complete an Army-approved motorcycle safety course. The course will consist of classroom instruction, hands-on training, and successful completion of a written evaluation." Many installations experience problems regarding training simply because they are unsure what constitutes "Army-approved."

According to the U.S. Army Safety Center (USASC), the best motorcycle safety training program available today has been developed by the

Motorcycle Safety Foundation (MSF), which is a nationally recognized organization and is Army-approved.

In fact, 31 state licensing agencies use one of four different MSF skill tests, 41 states use the MSF motorcycle operator's manual, and 29 states incorporate the supporting knowledge test. For more information on the Motorcycle Safety Foundation, check out their web site: <http://msf-usa.org/pages/MAIN1.html> or for the nearest rider course location, call (800) 446-9227.

■ Am I relaying POV accident data to my soldiers? As all of us within the safety community know, the primary purpose of accident investigation and reporting is to develop countermeasures to prevent similar accidents from occurring. Besides ensuring that soldiers understand and adhere to regulatory guidance regarding motorcycle safety requirements, leaders must also make every effort to share both Armywide and local POV accident experience with their soldiers. This can be done through safety council meetings, stand down days,

<sup>1</sup> In accordance with message DTG 131922ZJUN00, subject: Implementation Guidance for AR 385-55: Prevention of Motor Vehicle Accidents, section E 3.2 replaces section B-3 (Motorcycle Safety) of 385-55. The new section applies to anyone operating a motorcycle on any DOD installation. If you are stationed somewhere that does not have a helmet law you are still required to use PPE. Section E 3.2.9 states that failure to wear personal protective equipment or comply with licensing or operator training requirements may be considered in making line-of-duty determinations if the injury is from nonuse of PPE or noncompliance. The HSPG can be viewed or copied from our website <http://safety.army.mil/>.



safety alerts, unit formations, long holiday weekend briefings, and articles published in the installation newspaper. Armywide POV accident data can be obtained from the USASC web site at <http://safety.army.mil>. Local accident data is available to leaders from their installation safety office.

■ Am I enforcing AR 385-55 and local SOPs? Providing education to soldiers regarding proper equipment and safe riding techniques is extremely important; however, enforcement of the regulatory requirements may be the most critical element in reducing motorcycle accidents. Many installations ensure these requirements are met by integrating them into the local

motor vehicle operator regulations that are enforced by the installation provost marshal. Enforcement of these requirements by installation military police and chain of command sends a clear message to soldiers that leadership will not tolerate violations and is concerned about the well-being of their soldiers.

In addition to the training requirements we have discussed, Appendix B of AR 385-55 specifies additional requirements for motorcyclists. These consist of the following:

■ Operators must be currently licensed to operate a motorcycle.

■ Motorcycles and mopeds must have headlights turned

on at all times except where prohibited.

■ Soldiers must wear properly fastened DOT-approved helmets when operating a motorcycle or riding as a passenger.

■ Soldiers will wear eye protection (clear goggles/face shield).

■ Soldiers will wear appropriate clothing including long-sleeved shirt or jacket, long trousers, full-fingered gloves, leather boots or over-the-ankle shoes, and high-visibility garments (bright colored for day and retro reflective for night). ♦

—POC: Frank L. McClanahan, Senior Safety and Occupational Health Specialist, Aviation Branch Safety Office, Fort Rucker, AL, DSN 558-1027 (334-255-1027), [mccclanahanf@rucker.army.mil](mailto:mccclanahanf@rucker.army.mil)

**(Reprinted from Countermeasure.)**

## BLACK HAWK USERS, WE NEED YOUR HELP!!!

**A**MCOM is looking for input from Black Hawk users.

The following (pages 11 & 12) is a survey being conducted by AMCOM Engineering for the purpose of evaluating the H-60 usage spectrum. This spectrum is an important part of the safety of the aircraft.

The usage spectrum is a large part of the equation which calculates the retirement time of aircraft components. In general, over the years the operations of an aircraft change. This survey is being conducted to ensure that the current

usage spectrum is still valid. This survey will also be used as a building block for future H-60 systems such as the UH-60L+ and UH-60X. Please have the Unit Commander or Operations Officer fill out this survey and return it to:

**Commander**

**US Army AMCOM**

**AMSAM-RD-AE-F (Usage Spectrum Evaluation)**

**Redstone Arsenal, AL 35898**

**Or FAX to**

**Brad Huhlein (Usage Spectrum Evaluation)  
at DSN 897-4923 or Commercial (256)  
313-4923**

Each mission identified (A-H) in part 1 will require a separate part 2 sheet. Copy as necessary.

Please call Brad Huhlein with any question or comments at (203) 386-4975, e-mail [bradley.huhlein@redstone.army.mil](mailto:bradley.huhlein@redstone.army.mil). Thank you for your help.

**YOUR INPUT WILL MAKE A DIFFERENCE.**



# UH-60A/L USAGE SPECTRUM SURVEY

## UNIT LEVEL DATA COLLECTION SHEET

### Part I

Unit Designation: \_\_\_\_\_

Location: \_\_\_\_\_

Field Altitude: \_\_\_\_\_  
Alt. (ft. above Sea Level)

Number of Aircraft: \_\_\_\_\_

Unit Flying Rate: \_\_\_\_\_  
Avg. Hours per Month

Date of Survey: \_\_\_\_\_

Identify the missions flown by the Unit and distribute the total Unit flight hours into those missions. ATM Training/Practice shall be considered as a mission. For each mission you identify below please complete a Part II form.

#### MISSION

#### % of Flight Hours

|          |         |
|----------|---------|
| A. _____ | _____ % |
| B. _____ | _____ % |
| C. _____ | _____ % |
| D. _____ | _____ % |
| E. _____ | _____ % |
| F. _____ | _____ % |
| G. _____ | _____ % |
| H. _____ | _____ % |

Must Total to 100%

**TOTAL** \_\_\_\_\_ %

# UH-60A/L USAGE SPECTRUM SURVEY

## UNIT LEVEL DATA COLLECTION SHEET

### Part II

---

Mission: \_\_\_\_\_  
(Letter)

Mission Duration: \_\_\_\_\_

Takeoff Gross Weight: \_\_\_\_\_ lbs

Takeoff C.G.: \_\_\_\_\_ inches

Takeoff Configuration – Check the applicable item(s):

- ☐ Slick
- ☐ Volcano
- ☐ External Sling Load
- ☐ Wings – ESSS
- ☐ Robertson Internal Fuel Tank
- ☐ Internal Rescue Hoist
- ☐ Aeromedical Kit

If Wings (ESSS) box is checked, complete the following configuration options:

#### Outboard Pylon

- ☐ Nothing
- ☐ 230 Gallon Tank

#### Inboard Pylon

- ☐ Nothing
- ☐ 230 Gallon Tank
- ☐ 450 Gallon Tank



# VFR Flight Plan Closure

The FAA has identified a growing trend of military aviators failing to properly close out VFR flight plans. This oversight applies to all branches of the Armed Forces. However, the highest percentage of VFR flight plans not being closed come from Army and Marine aviators since they file most of the VFR flight plans. Let's do our part as Army Aviators to ensure we are not part of the problem.

AR 95-1, paragraph 5-2d, is our mandate to file flight plans (or be on an operator's log for local flights) for all flights. We do a good job of filing and opening the flight plan, but remember, the process is not complete until the flight plan is closed. AR 95-1, paragraph 5-5e, addresses this by placing the onus on the pilot-in-command to "ensure the flight plan is closed as shown in the DOD flip." For those of you who like references, read paragraph 5-31 of the GP. This paragraph cites three examples to ensure your flight plan is properly closed. The Aeronautical Information Manual (AIM) is another good reference to put out at your next Pilot's Call. Paragraph 5-1-4 in the AIM defines VFR flight plans and how they benefit the user. Pay particular attention to 5-1-4g. Using VFR position reports will more clearly define the search area in the event a Search and Rescue

(SAR) mission is required. (If you're flying from A to C and your last VFR position report was made at B, the search area can now be focused from B to C.) This may be beneficial during a long cross-country flight. AR 95-1 no longer



requires us to make hourly position reports during VFR flights, but it is still good practice.

## So why do we still have the problem of VFR flight plans not being closed?

■ Military pilots are not in the habit of personally opening and closing VFR flight plans when departing or arriving at military airfields. This service is automatically provided by Base Operations. This becomes a negative habit transfer problem when we depart to or from a civilian airfield. Remember, this automatic service does not exist when departing/arriving at a civilian airfield or when military base

operations are closed.

■ Tail numbers are not provided with tactical call signs of flight plans. This is generally not an Army issue. However, if you are using tactical call signs on a flight plan, remember to provide the tail number(s) of the aircraft. All Army aircraft tend to look alike during a ramp search without a tail number to distinguish them!

■ Incorrect identifiers are used for the departure and/or destination airport. This will cause incorrect routing of the flight plan. Attention to detail!

■ Multi-aircraft flights are not properly re-filing after breaking into individual flights. The former chalk 2 closes the flight plan under their tail number. This leaves the original flight plan unanswered.

■ Flight routes are changed without updates to the originally filed flight plan. The aircraft does not arrive at the expected airfield and SAR procedures are initiated.

■ Military Base Operations are not properly closing flight plans with the FSS. This is not the aviator's fault, but do yourself a favor and get the operations specialist's initials when landing at a military field. Do not do this as a "blame line", but rather to identify and fix a problem within base operation's procedures.

This list illustrates some of the common reasons for a flight plan not getting closed out. It is not posted as an

excuse for the aviator. It is a reminder of some common problems happening within our own operations. Make sure your flight does not fall victim to one of these areas. It's your responsibility as a pilot to close out your flight.

### **What are the consequences of failing to close out a VFR flight plan?**

A VFR flight plan is protection. There is no FAA requirement to file a VFR flight plan. The FAA views a flight plan's primary purpose as a means to initiate a SAR operation should it become necessary. In addition to a SAR tool, the military uses a flight plan as an announcement of your arrival at another military base. This allows landing rights, departure rights and helps avoid any embarrassing or uneasy moments at a military airfield. All this happens automatically without our having to open or close the flight plan. But remember what AR 95-1 says: It is the Pilot-in-Command's responsibility to ensure the flight plan is closed. If we forget to close a flight

plan, the FSS assumes it is overdue and begins the SAR process 30 minutes after ETA and communications or location cannot be established. A communications search alone could involve up to 20 to 40 airfields in the area. If these airfields are closed, the search may fall on local and/or county law enforcement agencies.

This is a large amount of manpower being diverted for an unnecessary operation or being displaced should an actual SAR be needed elsewhere. The FAA will always ensure that potential downed aircraft are found in a timely and efficient manner through the use of established SAR procedures.

We don't need to dilute the urgency of these operations through an ongoing "boy who cried wolf" syndrome. (To better understand SAR procedures, read section 6-2-7 of the AIM. Pay particular attention to sections f and g.) Flight Service Stations are not immune to mistakes either. If you feel that you followed the correct procedures and the failure was at the FSS, contact your Department of the Army Regional Representative

(DARR). Your DARR should be used to maintain a productive and open line of communication between the unit and the FSS or FAA. The DARR can help resolve conflict. Your DARR is a great source of information regarding interaction between the military and the FAA.

They can help you coordinate with FSS managers for tours or discussion and provide FAA support to base operations regarding training, procedures, discussion, etc... The bottom line is that we need to be professional and thorough in all aspects of our operations.

Military and civilian aircraft are sharing the same airspace and both must do their part to make the system work smoothly. The next time you're closing out the logbook ask yourself if you closed the flight plan too. Use the crew level AAR as a tool to ensure the mission is complete. As the old saying goes, "the job's not finished till the paperwork is done". ♦

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## **Army Safety Conference set**

The Army Safety and Occupational health Conference and training seminars will be held at the Opryland hotel, Nashville TN, September 25-29, 2000. This year's theme is "You make a difference". The intent of the meeting is to inform, train, and motivate personnel responsible for implementing the Army Safety Program, to include Commanders, operating personnel, and military and civilian safety professionals.

Details are available on the website of the conference manager <http://www.ncsievents.com>. Conference attendees must make their own lodging arrangements. Information is available on the website.

—James Gibson, Office of the Director of Army Safety, DSN 329-2409 (703) 601-2409

# Accident briefs

Information based on *preliminary* reports of aircraft accidents

## AH64



### Class C

#### A series

■ During pre-flight inspection, damage was found to one tail rotor blade and the stabilator. Damage resulted from a Camloc fastener retainer off the 90 degree gearbox fairing. Suspect retainer separated during flight, hit tail rotor blade and was deflected into the stabilator.

■ While in cruise flight at 200' AGL, a bird flew into aircraft's main rotor system. Aircraft landed without further incident.

■ During engine run-up, #4 drive shaft twisted, severing forward of the #1 anti-flail assembly.

■ While aircraft was making a shallow approach to roll-on landing, tail wheel struck a concrete bunker and broke off.

#### D series

■ Bird struck right engine nacelle during flight. Aircraft landed without further incident.

### Class E

#### A series

■ While at a hover, crew noted a strong fuel odor in the cockpit. Crew landed the aircraft and shut down the engines. Postflight inspection found fuel dripping from No.2 engine nacelle and down the side of the aircraft. Further inspection found fuel pooled in the catwalk area and both engine nacelles. Maintenance personnel replaced the APU fuel control, solenoid, fuel line and fitting.

■ During blade track and balance (ground run-up only) MP heard unusual noise from the transmission area. Aircraft was shut down with no further incident. Inspection revealed that the forward tail rotor hanger bearing was damaged beyond repair and did not have any grease in it. Maintenance replaced the tail rotor hanger bearing.

■ Aircraft was in cruise configuration on a night PNVIS mission when a TADS Electronic Unit failure was experienced.

Aircraft returned to field site and landed without further incident. The power to the TADS was recycled and unit operated normally.

■ Aircraft was in hot refuel when POL personnel ceased the refueling operation due to a clogged fuel hose. Refuel hose was clogged with a fibrous foreign material. Aircraft was shutdown, defueled and fuel filters changed with no evidence of contamination.

#### D series

■ During APU operations, the aircraft's main rotor blades started to spin and accelerate. Crew immediately shutdown the APU. After the blades stopped spinning, crew attempted another APU start with the same results. Suspected internal transmission clutch failure.

## CH47



### Class C

#### D series

■ During landing, aircraft rolled back and struck a boulder, resulting in sheet metal and antenna damage.

■ A rotor overspeed of 117% occurred during No. 2 engine HIT check.

■ Left aft landing gear drag brace snapped during landing, resulting in sheet metal damage to lower ramp.

■ During water bucket training, the "Bambi" water bucket was damaged when it was inadvertently dropped from 50' AGL.

### Class D

#### D series

■ During run-up (APU Start) a loud noise was heard from the APU area and a shudder was felt throughout the aircraft. Three attempts were made to start the APU with the same results each time. Maintenance was notified and a new APU hydraulic motor/pump was installed.

■ Prior to engine runup, crew heard loud bang from APU. APU then could not be started.

## DH58



### Class C

#### A series

■ During landing to a tactical field site, aircraft sustained damage to tail rotor blades and tail rotor assembly.

■ During simulated engine failure at altitude, the throttle was advanced to the full open position and aircraft was decelerated at 50' AGL. The N2 and NR needles split and the NR oversped to 115% for approximately one second.

#### C series

■ While on the ground, engines running, transmission oil light illuminated. Aircraft was shutdown without further incident. Replaced transmission oil pressure switch.

## UH60



### Class C

#### A series

■ During post flight inspection, two main rotor blade tip caps were found to be damaged. Tree strike was suspected. Blade tip caps were replaced.

### Class D

#### L series

■ During the fourth of six class V sling loads, cargo net separated from the sling leg, which remained attached to the cargo hook. The load impacted in an unoccupied wooded area. There was no damage to the aircraft. Inspection of the sling leg indicated no damage to the grabhook assembly other than the keeper was missing. Link failure was ruled out. Improper rigging by inverting the grabhook is suspected.

### Class E

#### A series

■ During run-up, stabilator auto mode failed during hydraulic leak test. Aircraft was shut down without further incident. Hydraulic back-up pump replaced.

For more information on selected accident briefs, call DSN 558-9855 (334-255-9855). Note: Information published in this section is based on preliminary mishap reports submitted by units and is subject to change.

# Steam cleaners need GFCI

**URGENT: Death, serious injury, or damage to Army equipment will occur if actions specified in this message are not implemented.**

If you have a combination pressure washer and steam-cleaner around the hangar, you could be risking serious injury. These machines are electrically operated, and burn diesel fuel to obtain the high temperatures and pressures required for cleaning. Many of these machines lack ground fault circuit interrupter (GFCI) protection features. Because of the wet conditions surrounding the items being cleaned and the lack of GFCI protection, electrical shock and possible electrocution of the operator could result.

The Tank Automotive command has issued an urgent safety-of-use message (SOU M TACOM-00-016) mandating the use of a ground fault circuit interrupter with all pressure washers rated 250 volts AC and less.

The GFCI fix can be accomplished by either connecting the steam cleaner power plug into a power supply outlet with a GFCI protection

system certified by a licensed electrician, or by connecting the steam cleaner to an electric supply cord with a built-in GFCI. Attach a tag plainly and permanently marked:

THIS PRODUCT IS PROVIDED  
WITH A GROUND FAULT CIRCUIT  
INTERRUPTER BUILT INTO THE  
POWER CORD PLUG.  
IF REPLACEMENT OF THE PLUG  
IS NEEDED, USE ONLY IDENTICAL  
REPLACEMENT PARTS.  
DO NOT REMOVE THIS TAG.

Contact your TACOM Logistics Assistance Representative with any questions about this message. ✧

—SOU M TACOM-00-016

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## POV Fatalities



through 31 July

FY00  
87

FY99  
106

3-yr Avg  
93



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